

Appendix B

Supplemental Environmental Projects

1. Introduction and Background

Environmental Protection Agency policy allows the performance of Supplemental Environmental Projects (SEPs) to be taken into account in establishing the monetary penalty appropriate for settlement of a violation of Clean Water Act requirements. In a September 9, 2004, Memorandum of Agreement between Coos County and the U.S. Army Corps of Engineers (Corps of Engineers), Coos County agreed to spend \$525,000 carrying out Supplemental Environmental Projects involving fish passage improvement. The first of those projects was a bridge installation and culvert removal on Willanch Lane County Road in Coos County, with the County being credited \$30,000 toward the \$525,000 total. The remaining project locations are shown in Table 1 and in Maps 1-15. The County has also completed the project at Lost Creek, site 1 in Table 1. However, at this time the Corps of Engineers has not been presented with the schedule of costs for that project. Therefore, in the interest of simplicity, the remainder of this appendix refers to a balance of \$495,000, with the understanding that amounts spent on the Lost Creek project will be applied to that balance.

2. Definitions and Site Locations

- The term "bankfull width" means the width of the stream channel at the elevation where it begins to spill onto the current, active floodplain. Where there is no current, active floodplain, bankfull elevation may be taken as the elevation at the top of streambed deposits (i.e., gravel bars) or approximated by consideration of other physical characteristics such as those in the definition of ordinary high water mark, below.
- The term "in-water work window" means the period designated for a particular location in the Oregon Department of Fish and Wildlife publication *Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, dated June 2000, unless a different period has been designated or approved in writing by the National Marine Fisheries Service (NMFS, also known as NOAA Fisheries Service). For all locations proposed for SEP projects in this appendix, the standard ODFW window is July 1 – September 15.
- The term "ordinary high water mark" (OHWM) means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

3. General Requirements

Coos County shall budget \$495,000 over three years to be used in carrying out Supplemental Environmental Projects (hereafter, the SEP budget).

Each SEP shall consist of a "stream simulation" culvert replacement. Design and construction of each project shall be consistent with the remainder of this appendix and with chapters 6, 7, and 8, and other relevant chapters and appendices of *Design of Road Culverts for Fish Passage*, 2003 Edition, Washington Department of Fish and Wildlife (document is available at <http://wdfw.wa.gov/hab/engineer/cm/>), unless such design and construction would violate the requirements of OAR 635-412-0035, in which case the latter requirements shall apply to the extent necessary to avoid such violation. The basic components of stream simulation shall include:

- The culvert is oriented in line with the flow direction of the stream.
- The culvert is buried approximately at the slope of the stream and below its maximum scour depth.
- The culvert is embedded with an appropriate mix of properly sized material to recreate a bed and channel inside the culvert.
- The width of the bed inside the culvert is equal to or greater than 1.2 times the bankfull width of the stream, plus two feet.
- The open area of the culvert (i.e., after embedding) is capable of passing Q100 flows.

The County shall, to the degree possible, carry out these SEPs in the order shown in Table 1. The County shall carry out as many of the projects as possible within the total SEP budget of \$495,000. If the amount remaining in the SEP budget is less than the amount needed to carry out the next project on the list, the County shall proceed to the first project on the list whose projected cost is less than the amount remaining in the SEP budget. If there is no project on the list with a projected cost less than the amount remaining in the SEP budget, the County may carry out a project whose cost exceeds the balance in the SEP budget. However, should it choose to do so, the County will *not* be due compensation for amounts spent in excess of \$495,000. Alternatively, the County may pay the amount remaining in the SEP budget to the US Treasury, as below.

All SEPs shall be completed by the end of the 2011 in-water work window. Any money remaining in the SEP budget at that time shall be paid to the US Treasury within 60 days.

The Corps expects to authorize any discharges of dredged or fill material into waters of the United States associated with these projects under Nationwide Permit 32 (hereafter, NWP 32). However, NMFS is expected to list Oregon Coast Coho under the Endangered Species Act (ESA) in February 2008. In addition, the streams in which the SEPs would be performed are Essential Fisheries Habitat (EFH) under the Magnuson-Stevens Fishery Conservation and Management Act.

The Corps is pursuing programmatic ESA consultation on certain classes of activities (Special Local Operating Procedures – Endangered Species, or "SLOPES"). It appears the SEP

projects will fit under that programmatic SLOPES consultation, fulfilling both ESA and EFH consultation requirements. However, before issuing the verification of authorization, the Corps must obtain concurrence from NMFS that the projects do, in fact, fit within the programmatic consultation. Further, the Corps must coordinate with Oregon's State Historic Preservation Officer and appropriate Tribal governments regarding historic and cultural resources. Any of these steps could result in the Corps being unable to verify authorization of the SEP project at a given location. In the event the Corps is unable to verify authorization of a given SEP project, the County shall move on to implementing the other projects lower on the priority list.

In carrying out the SEPs, the County shall comply with the terms of the NWP 32 verification of authorization, the national, regional and case-specific conditions of that verification, the requirements and conditions established by NMFS in the programmatic SLOPES consultation, the conditions established by the Oregon Department of Environmental Quality in its certification under section 401 of the Clean Water Act, and the conditions established by the Oregon Department of Land Conservation and Development in its Coastal Zone Management Act advance consistency concurrence under the Coastal Zone Management Act. The Corps will transmit the specific requirements of the NMFS programmatic consultation as soon as the final version of that consultation is made available to the Corps.

The County may also need to obtain one or more Removal-Fill permits from the Oregon Department of State Lands.

4. Design Requirements

As stated above, each project shall be designed in accordance with the relevant stream-simulation portions of *Design of Road Culverts for Fish Passage*, 2003 Edition, Washington Department of Fish and Wildlife. In particular, the determination of bankfull width (upon which necessary culvert size is based) will be based upon the definition in Appendix A and the guidance in Appendix H of that document. (Note the definition of Ordinary High Water Mark contained in that document is that established by the State of Washington, and is different than that in Corps of Engineers regulations. The Corps of Engineers definition is shown in section 2 of this appendix.)

In designing the SEP, stream gradient shall be measured upstream and downstream of the crossing over a distance of at least 20 channel-widths or 300 feet, whichever is greater. Bankfull width measurements shall be taken at several locations in relatively straight run sections of the stream over that same reach, and averaged. The County shall photograph the channel at each location where a bankfull width measurement was taken, and note the points on the bank used in that measurement.

The slope ratio gradient of the culvert design is a measure of the difference between the slope of the bed material inside the culvert (S_{culv}) and the natural channel slope (S_{ch}). The slope ratio S_{culv} / S_{ch} shall not be greater than 1.25.

The culvert bed width $W_{\text{culvert bed}}$ (i.e., the width of the streambed material inside the culvert) shall be determined by

$$W_{\text{culvert bed}} > (1.2 \times W_{\text{ch}}) + 2$$

where W_{ch} is the average bankfull width obtained above, measured in feet.

Culvert embeddedness (i.e., the depth of streambed material inside the culvert) shall be 30% to 50% of the culvert height. Note that if the culvert is designed with less than 50% embeddedness, then the width of the culvert will necessarily be greater than $W_{\text{culvert bed}}$. The open area of the culvert (i.e., above the streambed material) must be capable of passing the expected 100-year flow event. Culvert bed design shall be in accordance with chapter 6 of *Design of Road Culverts for Fish Passage*, 2003 Edition, Washington Department of Fish and Wildlife unless such design would violate the requirements of OAR 635-412-0035, in which case the latter requirements shall apply to the extent necessary to avoid such violation.

5. Pre-Construction Notification and Construction of Projects

In 2008, at its earliest convenience, the County shall notify the Corps of Engineers of the SEPs it intends to carry out during the 2008 in-water work window. In subsequent years the County shall notify the Corps of Engineers by December 31 of the SEPs the County intends to carry out during the in-water work window for the following calendar year.

For each project the notification shall include the following:

- The bankfull channel width measurements and the data from which stream gradient was determined.
- A scaled map or aerial photo showing the stream above and below the project, and indicating the locations of bankfull channel width measurements.
- Ground-level photographs of the stream upstream and downstream of the existing culvert. These photographs must identify the locations at which bankfull channel width measurements were taken, and indicate the elevation points on the bank used in those measurements.
- Plan and cross-section views of the project.
- A work area isolation plan meeting the requirements of the NMFS programmatic consultation. If the County believes a work isolation plan is not necessary, the County shall provide information supporting that position.
- An erosion and pollution control plan meeting the requirements of the NMFS programmatic consultation.
- The proposed schedule for implementing the project.
- Information on *how* the work will be accomplished, e.g., the types of equipment to be used, the composition of streambed material to be placed within the culvert and how it will be placed, etc.
- All other information required by the programmatic consultation.

The Corps of Engineers will, within 60 days of its receipt of the above information, notify the County of any concerns it may have regarding the design, culvert size, culvert slope or other aspects of the proposed project. If the Corps of Engineers has any such concerns, the Corps and County shall, at their earliest convenience, discuss those issues and attempt to reach agreement on the matter. If the County and the Corps are unable to reach agreement, the issue shall be resolved in accordance with the section on Dispute Resolution of the Consent Decree.

The County will *not* proceed with a given project until it has been notified in writing that the project is authorized under nationwide 32, that the design for the project complies with Regional Condition 7, and that NMFS concurrence under the programmatic consultation has been obtained.

The County shall begin construction of each SEP early enough that work on that project can be completed by the end of the standard in-water work window. Once started, the County shall pursue the project diligently until completed.

6. Monitoring Requirements

For each project, the County shall submit an action completion report to NMFS and the Corps within 60 days of completing all work below the OHWM on that project. The report must include the data required by the NMFS programmatic consultation, including photos of habitat conditions before, during and after construction of the project.

The County shall monitor and maintain each completed project as part of its regular maintenance program, provided that the County shall inspect each project after the first winter following completion of the project, and at least one other time three to five years following completion of the project. During each inspection the County shall document conditions inside, upstream and downstream of the culvert, including any areas of scour or erosion.

Photographs shall be taken with a digital camera and shall be of a resolution and quality sufficient to allow the production of reasonable quality 5x7 or larger prints. For each photograph the County shall note: 1) the data file name; 2) the name and number designation of the project, using the designations in Table 1; 3) the date upon which the photo was taken; 4) the direction toward which the camera was pointed, 5) whether the photo is looking upstream or downstream (if applicable), and; 6) a brief description of what the photo is illustrating.

The County shall provide the Corps of Engineers with a report transmitting the photographs and other information for the projects inspected that year. The report shall be submitted by September 30, and be sent to:

U.S. Army Corps of Engineers
ATTN: Enforcement Team Leader
Regulatory Branch (OD-G)
P.O. Box 2946
Portland, Oregon 97208-2946

With the hard copy document, the County shall provide copies of the original data files for all digital photographs, whether used in the report or not. The County shall also provide a photograph log file which shows, for each photograph: 1) the data file name; 2) the designation of the crossing involved, using the identification system described elsewhere in this document; 3) the date upon which the photo was taken; 4) the general direction toward which the camera was pointed, 5) whether the photo is looking upstream or downstream (if applicable), and; 6) a brief description of what the photo is illustrating.

7. Remedial measures

Should the monitoring reveal any condition adversely affecting the stability or environmental benefit of the project (e.g., loss of culvert bed material), the County shall propose remedial measures to be taken, along with a schedule for implementing those measures. The Corps of Engineers will, within 60 days of its receipt of the proposal, notify the County of any concerns it may have regarding the design, or adequacy of the proposed remedial measures. If the Corps of Engineers has any such concerns, the Corps and County shall, at their earliest convenience, discuss those issues and attempt to reach agreement on the matter. If the County and the Corps are unable to reach agreement, the issue shall be resolved in accordance with the section on Dispute Resolution of the Consent Decree.

The County will *not* proceed with a given project until it has been notified in writing that the proposed remedial measures do not require NMFS concurrence under the programmatic consultation, or that concurrence has been obtained.

Table 1. Names and Locations of Supplemental Environmental Project Sites

All coordinates are based on NAD1983 datum.

Site Number	Location Description	UTM Zone	Easting	Northing
1	Lost Creek	10	411 125	4 781 815
2	Cardwell Creek	10	407 970	4 791 845
3	Panther Creek	10	408 340	4 791 650
4	Lower Catching Creek	10	406 320	4 791 665
5	Upper Catching Creek	10	406 330	4 791 560
6	Knapper Creek	10	442 675	4 777 130
7	Bill's Creek	10	424 920	4 779 245
8	Unnamed Trib of EF Coquille near Dora	10	423 150	4 779 020
9	Boone Creek	10	405 105	4 792 035
10	Unnamed Trib of lower Catching Creek	10	406 350	4 792 915
11	Unnamed Trib of upper Catching Creek	10	406 020	4 790 503
12	Unnamed Trib of EF Coquille @ MP 28.1	10	433 560	4 778 090
13	Unnamed Trib of EF Coquille @ MP 28.3	10	434 020	4 778 015
14	Unnamed Trib of EF Coquille @ MP 28.25	10	433 965	4 778 050
15	Unnamed Trib of Wilson Creek	10	408 455	4 791 070